Prepare the sensing assembly

Bently Nevada

330801-28-20-050-03-02

A practical guide compiled by Apter Power for the metric PROXPAC assembly. Use it to prepare installation and service work with the applicable manufacturer procedures and site controls.

Conductive machine target → 3300 XL probe in sleeve → Cover-mounted Proximitor sensor → Monitor via field cable

1 / Confirm the ordered configuration

Keep the entire 330801-28-20-050-03-02 identity through the work pack. Option 28 selects the 3300 XL probe with multiple approvals; option 03 supplies the metric M20 fittings kit; option 02 defines the NPT machine connection.

2 / Establish the work boundary

Place the machine and monitoring channel in the prescribed maintenance state. Equalize pressure before opening the enclosure or removing the probe sleeve. Arrange containment for any leakage from the machine case.

3 / Inspect before mounting

Inspect the probe tip, cable, connector, sleeve, seal and housing. Handle the Proximitor sensor with electrostatic precautions. Keep its contact surfaces clean and dry, and keep equipment sealed in its packaging until it is required.

Preparation item	Reason
Mounting / target access	Allow external adjustment and preserve the intended sensing field.
Circuit identification	Keep probe, housing-cover electronics and monitor wiring associated with one channel.

Mount, position and seal

Bently Nevada / 330801-28-20-050-03-02

01 Prepare the machine interface

Confirm the option 02 mounting connection is 3/4-14 NPT. Assess the short-penetration option C050 for a counterbore where nearby metal could affect the probe field.

02 Evaluate sleeve vibration

Assess the complete sleeve and standoff arrangement for resonance. The sleeve resonant frequency should be at least three times the machine running frequency; convert shaft speed to hertz by dividing rpm by 60.

03 Set the operating gap

Install the outer sleeve, insert the probe sleeve and establish the gap before securing the enclosure and conduit. Hold the adjusted position while tightening the sleeve locknut.

04 Complete enclosure assembly

Seal unused entries, place the housing on the outer sleeve and engage the retaining plate. Attach the conduit without creating a liquid path into the housing; fit the probe connector protector and fasten the cover.

Fastener	Specified torque
Probe sleeve locknut	39.3 N.m
Housing retaining nut	29.5 N.m
Blanking plug nut	0.5 N.m

A marked sleeve position can assist reinstallation, but it does not replace gapping. Prevent the probe from turning into the target during insertion.

Keep the sensing field clear

Assess target curvature, nearby metal and adjacent sensing tips before accepting the mount. These effects can shift response even when the assembly is mechanically secure.

Wire and establish excitation

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Negative DC power / monitor → VT: excitation COM: common OUT: signal → PROXPAC sensor / probe

Circuit condition	Excitation and current
Without barriers	-17.5 to -26 V DC; maximum 12 mA
With barriers	-23 to -26 V DC
Range consideration	More positive than -23.5 V DC can reduce linear range

Field cable and shielding

Use three-conductor twisted shielded field cable. Identify power, common and signal at both ends rather than relying on conductor colour. Ground the shield at one point at the monitor in the applicable no-barrier circuit.

Separate field wiring from the probe link

The probe connects to the sensor locally inside the assembly. The monitor run is field wiring rather than a probe extension cable. Use the applicable barrier and grounding drawing for a hazardous-area circuit.

Check polarity before measuring

Measure excitation between VT and COM, and signal between OUT and COM. The transducer power and signal voltages are negative relative to common. Use the frequency-response curve when assessing longer field runs or barriers.

Keep the local ClickLoc connection protected against contamination. The probe cable is a 75 ohm triaxial connection with FEP insulation; field cable and probe cable perform different roles and should not be interchanged.

Prove measurement response

Bently Nevada / 330801-28-20-050-03-02

Check	Reference condition
Recommended gap	1.27 mm (50 mils)
Nominal linear span	2.0 mm (80 mils)
Incremental scale factor	7.87 mV/um (200 mV/mil), +/-5.5% typical
Frequency response	0-8 kHz, +0/-3 dB, at 50 mils gap with up to 305 m field wiring

Prepare the scale-factor test

Use a digital multimeter, negative DC supply, spindle micrometer and 10 kilohm resistor. Compensate for mechanical backlash, establish electrical zero and move to the beginning of the linear region before taking readings.

Record a monotonic response

Take successive readings in 250 micrometre or 10 mil steps. Calculate the change in output per displacement increment and the average response over the test span. Investigate non-monotonic output, connector movement or unexpected loading before release.

Use the correct reference conditions

The technical values use +18 to +27 deg C, -24 V DC, a 10 kilohm load, an AISI 4140 steel target and the recommended probe gap unless a value has its own stated condition.

Repeat verification after replacement or disturbance, changed or erratic performance, or suspected calibration error.

Interpret the test result

For a 0.25 mm step, divide the magnitude of the voltage change by 0.25 mm to obtain V/mm. For the average check, use the voltage difference across a 2 mm interval. Keep the original gap sequence and compensate backlash consistently.

Diagnose and return to service

Bently Nevada / 330801-28-20-050-03-02

Observed signal	Checks to prioritize
OUT approximately 0 V	Check excitation and shorts in field wiring or at the sensor terminals.
Signal close to 0 V but negative	Check excessive closeness to target, connector condition, unintended target metal and probe continuity.
Signal close to excitation	Check OUT-to-VT wiring and the housing-cover sensor.

Service the correct assembly

If the Proximitor sensor is faulty, replace the sensor and housing lid as a unit using the replacement identity on the installed sensor. Do not remove the sensor from the lid or attempt internal repair.

Probe continuity check: the nominal centre-to-outer conductor resistance is 7.58 +/-0.5 ohms. Evaluate the connector and cable condition before condemning the sensor; a dirty, wet or loose connection can mimic a transducer fault.

Technical basis: PROXPAC Installation Manual 131236-01 Rev. F (08/07), sections 2-5; Specifications and Ordering Information 141621-01 Rev. F (11/2005), pp.1-7 and 9.

Related Bently Nevada products

Explore these separate product pages for system planning. Selection requires an independent interface and application check.

Product reference	Explore
Bently Nevada 31000-16-10-00-030-02-02	View Bently Nevada 31000-16-10-00-030-02-02
Bently Nevada 31000-16-10-15-100-02-02	View Bently Nevada 31000-16-10-15-100-02-02
Bently Nevada 31000-16-10-00-050-03-02	View Bently Nevada 31000-16-10-00-050-03-02